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EXAMINER

GRAYBILL, D

ART UNIT PAPER NUMBER

2814

DATE MAILED: 07/05/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No.  
**09/350,989**

Applicant(s)  
**Betori**

Examiner  
**David E. Graybill**

Group Art Unit  
**2814**



☒ Responsive to communication(s) filed on 3 May 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claim

☒ Claim(s) 1-16 is/are pending in the application.

Of the above, claim(s) 12-14 is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-11, 15, and 16 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on 12 Jul 1999 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been  
☒ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claim 5 must be shown or the features canceled from the claim. No new matter should be entered.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 4, 5, 8-11, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following lack sufficient literal antecedent basis:

Claim 2, "the opposite side of the die";

Claim 4 and 16, "said connection means for removable attachment of said pins";

Claim 5, "the circuit board on which it is mounted";

Claims 8 and 16, "all four side edges of the die";

Claim 10, "said semi-package";

Claim 11, "the electric ground potential or power supply."

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In claim 5, the scope of the term "type" cannot be determined because the common qualities that distinguish the individual members as an identifiable class are not recited in the claims, and they cannot otherwise be determined.

In claim 9, the scope of the term "micrometric" is unclear because the definition of the term is not art recognized, and it is not otherwise clearly defined in the disclosure.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 7 are rejected under 35 U.S.C. 102(a) as anticipated by Sato (5519251) or, in the alternative, under 35 U.S.C. 103(a) as obvious over the combination of Sato (5519251) and applicant's admitted prior art.

At column 4, line 14 to column 11, line 8, Sato teaches a semi-packaged, electrically tested electronic device, free from infantile mortality, characterized in that it

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comprises a silicon die 11 having a top surface and a bottom surface, in which an integrated circuit is realized externally accessible through a plurality of connection pads 13 and an array of connection pins 14 which are mechanically and removably connected to the die by connection means 21 and are electrically connected to the connection pads of the die by electric connection means 15; the pads are arranged along a central line on a side of the die and the pins are attached to the edges of the same side of the die; the pins are obtained by cutting a continuous strip support 27 on which the dies are mounted.

Although the combination of applied prior art does not appear to explicitly teach the limitation, "removably connected," this limitation is inherent in the product of Sato because the pins of Sato are capable of being removed.

To further clarify the teaching of the limitation, "electrically tested electronic device, free from infantile mortality," it is noted that this preambular limitation is a product by process limitation, and the product of Sato appears to be identical to the product of the instant product by process claim.

In the alternative, in the specification at page 2, line 16 to page 4, line 37, applicant admits as prior art an electrically tested electronic device, free from infantile mortality. In addition, it would have been obvious to combine applicant's admitted prior art product with the product of Sato because it would facilitate product reliability.

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Claims 6, 8-11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato, and the combination of Sato and applicant's admitted prior art as applied to claims 1, 3 and 7, and further in combination with McShane (5311057).

As cited, Sato teaches a product characterized in that the connection pins are distributed on all four side edges of the die; and the semi-package 31 covers the surface of the die where the connection pads are arranged together with their connections to the pins made by the wires, as well as all flanks of the die, leaving the opposite surface of the die exposed.

Although Sato teaches that the array of pins are realized as metallized strips attached to the die by means of an adhesive tape 21, Sato does not appear to explicitly teach that the array of pins are realized as metallized strips on a board of plastic material removably attached to the die by means of a double sided adhesive tape; and that the device includes a three or more point, conductive bar aimed at distributing the electric ground potential or power supply to three or more points of the die.

Nevertheless, at column 3, lines 37-57; and column 7, lines 3-41, McShane teaches an array of pins 18 realized as metallized strips on a board of plastic material 30 attached to a die 12 by means of a double sided adhesive tape 20; and a three point conductive bar (see column 5, lines 28-35, "three conductive layers") aimed at distributing electric ground and power supply to points of the die.

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Although the combination of applied prior art does not appear to explicitly teach the limitation, "removably attached," this limitation is inherent in the product of the combination of applied prior art because the plastic material of the combination is capable of being removed.

Also, although the applied prior art does not appear to explicitly teach the limitation, "aimed at distributing the electric ground potential or power supply to three or more points of the die," this statement of intended use does not structurally limit the product of the applied prior art, and the product of the applied prior art is inherently capable of being used for the claimed intended use.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cha (5428248).

At column 4, line 4, to column 6, line 24, Cha teaches a semi-packaged, electrically tested electronic device, free from infantile mortality, characterized in that it comprises a silicon die 11 having a top surface and a bottom surface, in which an integrated circuit is realized externally accessible through a plurality of connection pads and an array of connection pins 12 which are mechanically and removably connected to the die by double-side adhesive tape connection means 13 and are electrically connected to the connection pads of the die by electric connection means 14; the pads are arranged the edges of one side of the die and the pins are affixed to the edges of the opposite side

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of the die; and the connection pins are of a pre-formed type in order to accommodate the board on which the device is mounted.


To further clarify the teaching of a semi-packaged device, it is noted that device of Cha is capable of being further packaged; therefore, it is not fully packaged. For example, the exposed leads 12a of Cha are capable of being at least partially sealed by the package body.

Although Cha does not appear to explicitly teach the limitation, "in order to accommodate the thermal expansion differences between the die and the board," this intended result is an inherent result of the product by process limitation wherein the pins are pre-formed.

**Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to the group receptionist at (703) 308-1782.**

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m..

The fax phone number for group 2800 is (703)305-3431.

  
David E. Graybill  
Primary Examiner  
Art Unit 2814

D.G.